



# Experimental Setup



## Experimental system

Chromatography:

Breakthrough method

= Migration of Ca solution  
in resin area

2. Ca solution  
 $\text{CaCl}_2$   
+ Conc. HCl

fixed flow rate  
by pump

1. Crown-ether resin  
packed in column  
of 8mmf  $\times$  100cm

5. Measurement of  
isotopic ratio

4. Measurement of  
Ca concentration

3. Sampling  
by fraction collector

Water pump

Water  
thermo. bath

1m glass column

